

Mekran Large Crested Tern (*Thalasseus bergii bakeri*) but I could not identify the smaller grey terns. Immediately after seeing the terns, a single Wilson's Petrel, passed—the last to be seen on this voyage.

In Karachi Harbour Sooty Gulls (*Larus hemprichii*) were very numerous, so also were the Large Crested Sea Terns (*T. bergii bakeri*) and the Little Tern (*Sterna albifrons*) which, at this time of the year, would be the local breeding race *praetermissa*.

I was very interested to see, also, in this Harbour many Indian Reef-Herons (*Demigretta asha*) mostly in the slate-grey phase; they were comparatively tame and settled on the upper-works and rigging of the ships as well as beside the water; in the evening, they retired to a large clump of peepal trees in the dock area, where they appeared to be nesting. This is presumably the same colony as mentioned by Stuart Baker (page 353, Vol. VI, Birds) *Fauna of British India* Series.

In the evening, as we lay at anchor, flock after flock of hundreds (if not thousands) of Indian Shags (*Phalacrocorax fuscicollis*) with possibly some Indian Cormorants (*P. carbo sinensis*), passed close over our mast-tops on their way to their feeding grounds in the shallow lagoons on the opposite side of the harbour—a fitting finale to a most interesting voyage.

During the voyage, and while preparing this Diary for publication, frequent reference was made to the following books:—

<i>Birds of Canada</i>	...	...	By P. A. Taverner.
<i>Birds of the Ocean</i>	...	...	„ W. B. Alexander.
<i>Fauna of British India. Birds</i>	...	...	„ E. C. Stuart Baker.
<i>Handbook of British Birds</i>	...	...	„ Witherby and others.

REPTILES OF COCANADA.

BY

GARTH UNDERWOOD.

(With two graphs.)

The terrain consisted of a coastal strip of sand two to three miles in width. The water level was never more than about ten feet below the surface. Palms and cacti composed the principal vegetation, with patches of sparse grass. Inland was a zone of paddy fields; the mud was copious and vegetation plentiful.

The reptiles examined were collected with the aid of the local villagers and came, as far as is known, wholly from the two types of country described. The accounts of the species encountered are given in so far as they supplement or contradict the accounts given by Smith in *The Fauna of British India*, (Reptilia), 2nd Ed. Dimensions are all in millimetres.

The following abbreviations are used to reduce the bulk of the account:—

Temporals 2+2 and 2+3, 8 spp., means that 8 specimens were examined having 2+2 temporals on one side of the head, and 2+3 on the other side. Owing to the docked tails, the total lengths of snakes are not always comparable; the body and tail lengths are indicated separately thus:—

1,000 total length (b.750, t.250).

The ventral and subcaudal counts are indicated by V and C.

LORICATA.

Crocodylus palustris

In Pittapur Raja's College is the skelton of a *Crocodylus palustris* which wandered into the district. The writer was told that a few are sometimes washed down to the lower reaches by the Godavari river when it is in flood. It is not a normal inhabitant of the neighbourhood.

TESTUDINES.

Trionychidae :**Lissemys punctata**

This was the only Chelonian met with. Unfortunately the Godavari river was too far distant for any specimens to be obtained from it.

96 specimens were examined. 65 of these specimens possessed developed marginal bones. They were very variable. In 11 individuals the relation of 1st to 2nd marginals was different on the two sides. Taking the sides separately, in about three-quarters the 1st marginal was larger than the 2nd. This includes about one-tenth of the total number in which the 1st was much larger than the 2nd. In about one-eighth the 1st and 2nd marginals were equal. In the remaining eighth the 1st was smaller than the 2nd. The number of separate ossifications visible varied from 6 on each side (2 spp. 150×120 and 230×185) to 12 on each side (1 sp. 190×150). One specimen had 3 on the left and 4 on the right (200×160). In 6 specimens no aual marginals were apparent. 1 specimen had no marginals at all with consequent curtailment of the posterior border of the carapace (115×105).

The entoplastral callosity was always small, never absent. Assuming that plastron and entoplastral callosity are approximately elliptical then:—

$$\frac{\text{length} \times \text{breadth of plastron}}{\text{length} \times \text{breadth of entoplastral callosity}}$$

gives the approximate ratio of area of plastron: area of entoplastral callosity. For specimens of over 160 mm. in length this ratio varied from 63.5 (Plastron 163×139, callosity 21×17) to 480 (Plastron 200×168, callosity 10×7). The *F.B.I.* illustration of a 'moderate' callosity gives a ratio of 20.5.

In the young the skin on the costal plates was wrinkled, extracostally it was ropy; in a few cases the ropiness extended onto the costal plates. The smallest specimen in which the ropiness had been lost was 100×80; the largest in which it was retained was 130×100.

The largest specimen encountered was 235×190 (Plastron 253×192).

All the specimens had small crescentic folds of horny skin, 4 or 5 on the underside of the wrist, 1 on the underside of the tibial region.

One specimen had clubbed feet with no claws.

The colouration, although variable, showed certain consistencies.

The ground colour on the costal plates was dark olive, some times lighter and greyish, sometimes darker and greenish. The following black markings were usually present, sometimes fine, sometimes thick and heavy. On the neural plates starlike markings consisting of short streaks and, when the whole was heavily marked, of triangles also. Running across the intercostal sutures short parallel streaks. On the costal plates between these streaks, spots or irregular reticulate markings or both.

Extracostally the carapace was always lighter and yellow, often a brown colour, and bore spots or reticulations.

The black markings varied in thickness, the heavy ones were usually associated with reticulate markings on the costal plates, the light ones with small spots. There were all gradations of distinctness of the markings. In about one-fifth of the specimens, these of all sizes, they vary from faint to absent.

One large specimen showed a light pile-shaped band down each intercostal suture, there were no dark marks. Another of equal size and another smaller one showed the usual dark markings fading round the edges and these light bands appearing. The largest specimen (235×190) did not show this.

In about equal numbers the young showed spots or reticulations. These reticulations bore no relation to the underlying costal plates; in about one-tenth of the adults these irregular reticulations persisted.

In two specimens the ground colour was yellow-green, the smaller (105×95) with faint spots, the larger (145×125) devoid of markings, except on the head.

The head normally possessed 3 parallel stripes on each side, the middle one of each set running back from behind the eye, the two upper ones converged on the occiput and then diverged forwards between the eyes, the lower stripe was usually more or less wavy and varied greatly in length. Dorsally a median stripe ran back from behind the occiput. There were usually a few small marks around the snout, sometimes also the head was sprinkled generally with small irregular marks.

There was considerable variation in these stripes.

In about half the specimens the lower of the three parallel stripes was absent. In about one-third the upper stripes did not extend forwards between the eyes. In 4 specimens the upper stripes were double making 4 parallel stripes on each side.

In about one-sixth of the specimens the median stripe was double, in about one-twelfth absent or broken up.

Detailed measurements were made of the plastral callosities of 31 specimens and their course of development noted. Only 3 specimens of length less than 95 were examined.

The smallest (65×50) had no callosities. In one of 80×70 the hypohyal callosities only were apparent. In another of the same size the xiphiplastrals were also visible. All the larger specimens had the epiplastral callosities apparent. The smallest in which the

entoplastral callosity had begun to appear was 95×80 , the largest in which it had not appeared was 120×100 .

The epiplastral callosities appear as more or less circular, on either side of the mid-line about 10 mm. apart (100 mm. specimen). Later at about 130 mm. extensions begin to appear on either side and at about 150 mm. the callosities have expanded to meet the anterior edge of the plastron. The ratio of maximum breadth to length is then about 1:2. The distance separating them may increase in large specimens.

In the young the hypohyal callosities were relatively far from the border of the plastron and the inguinal pores lay 1-2 mm. outside the border of the callosities. With increase in size the bone extends towards the edges of the plastron, passing round and enclosing the inguinal pore. The change takes place in specimens from about 110-130 in length. Eventually the callosity extends to within several mm. of the edge, or reaches it, by which time the inguinal pore may be 10-20 mm. inside the border. The smallest specimen in which the hypohyal callosities reached the edge was 185×150 , the largest in which they were a few mm. from the edge was 200×170 . The hypohyal callosities also develop forwards and the relative distance between them and the epiplastral callosities diminishes with increase in size.

The xiphiplastral callosities are more or less oval in the young and the inner edges diverge anteriorly and posteriorly, they are then about 5 mm. apart. With growth in size they approach one another to a distance of, usually 2 mm. sometimes much less, they tend also to diverge less and to develop square ends.

Those specimens which, from the development of the callosities, appeared to be the oldest had them well sunk below the general level; they also had a noticeable waist where the hypohyal callosities met the edges instead of the convex outline of the young. In 2 well grown specimens the maximum width was at mid-body instead of on a line across the body passing just before the posterior plastral flaps.

The smallest specimen in which marginal bones had begun to appear was 100×85 , the largest in which they were not apparent was 120×100 . They start appearing from the outside inwards towards the mid-line.

This turtle was common in the paddy fields, canals and ponds of the district.

Only 1 was received with any water weed growing on it, this a filamentous alga on the soft skin around the base of the neck and forelimbs.

It was observed that in water, water was constantly being pumped in and out through the nostrils, presumably so that it might be smelt or tasted.

Some half dozen eggs were laid between the fourth week in October and the fourth week in December. Unfortunately all became addled and failed to develop.

SQUAMATA.

SAURIA.

Gekkonidae.

Hemidactylus brooki.

19 specimens were examined.

The variation in the number of labials was as in the *F.B.I.* The subdigital lamellae numbered 5 under the first digit, and 7 (2 specimens 8) under the fourth.

The colour ranged from very pale with no spots at all to brown with dark brown spots.

Hemidactylus frenatus.

This gecko was uncommon here. Only 2 specimens were seen, one had a longitudinal band down the back with wavy edges.

Hemidactylus leschenaulti.

This was much less common than *H. brooki*. 5 specimens were examined. The labials were as in the *F.B.I.* The subdigital lamellae were 6 under the first and 9 under the fourth digit. The femoral pores varied from 12-15.

There were undulating cross bars on the back and the tails of some had alternate dark and pink bands.

Two eggs were laid by one in the last week of March.

Agamidae.

Sitana ponticeriana.

This lizard was not common, probably due to the dampness. Only 2 specimens were seen.

Calotes versicolor.

This lizard was very common. 95 specimens were examined, 86 ♂ and 9 ♀.

The labials showed a wider range of variation, than given in the *F.B.I.* Taking each lip separately the counts were as follows:—

No. of labials		...	7	8	9	10	11	12	13	14	Total counts
No. of counts	Upper	...	—	—		18	79	65	8	1	172
	Lower	...	1	1	19	64	60	19	7	—	171

Taking sides of the head separately the upper labials exceeded the lower in number as follows:—

(No. of upper) (No. of lower)	+4	+3	+2	+1	0	-1	Total counts
	1	2	36	72	45	15	171

In 35 out of 85 specimens the labials on the two sides agreed with one another, in another 15 specimens there was a difference between the left and right but it was the same for upper and lower labials.

The mid-body scale rows showed the following variation in numbers:—

Mid-body scale rows	38	39	40	41	42	43	44	45	46	47	48	Totals
♂	—	1	4	16	9	13	13	7	10	5	2	80
♀	1	1	...	2	2	2	1	—	—	—	—	9

There is in this case no clearly defined modal value but 85% of the ♂ specimens fall within 41-46.

The dorsal crest in the ♂ was well developed. Counts were made from the first enlarged scale of the nuchal crest to the last of the dorsal crest. This last scale, although scarcely enlarged, was recognisable because it was at the end of a vertebral series and beyond it on the tail were two rows on either side of the mid-dorsal line.

The counts were as follows:—

No. of scales	46	47	48	49	50	51	52	53	54	55	56	57	Total
—	5	9	12	10	27	5	1	4	3	1	1	1	79

Although the range of variation is large the modal value is clearly defined and this count may have some value.

In the ♀ there was no distinct vertebral series of scales.

In the adult ♂ the cheeks were always well swollen.

The 85 ♂ examined ranged from 98 mm.-132 mm. The modal value was 121 mm. This was not very clearly defined however.

In 41 ♂ specimens with tail intact it varied in length from 240 mm.-393 mm. The statistical correlation between body length and tail length was .40 which is not close.

The relation between them is:—

$$\text{Tail length} = 1.3 \times \text{body length} + 141 \text{ mm.}$$

The colour of ♀ specimens was brown with darker bands, there were two light dorso-lateral stripes and whitish spots where the transverse bands crossed the longitudinal stripes. The young were lighter in general colouring and the dorso-lateral stripes very clearly marked. In the adult ♂ specimens these markings had vanished. There was generally a black band on the throat and also black on the legs. When excited the head and neck flushed red.

With regard to the egg laying season 4 ♀ were examined on August 19th and observations recorded as follows:—

Body length.

102	Oviducts empty,	15	eggs in ovaries,	4	mm. diam.
98	do	17	do	3	mm. diam.
85	Oviducts containing	14	eggs,	14 × 9	mm.
96	do	13	eggs,	12 × 6	mm.

On August 11th egg laying was observed and has been described in the *J.,B.N.H.S.*, Vol. 45, No. 2.

Scincidae.

Mabuya carinata.

This skink was common, 16 specimens were examined.

The shields of the head all agreed in having the supra-nasals separated from one another and also, in contradistinction to what the *F.B.I.* states to be the usual condition, the prefrontals separated. The anterior loreal ranged from considerably higher than the posterior loreal to just higher and from about $1/2$ to $2/3$ of its length. Mid-body scale rows number 30-32, dorsal scales 38-42 and the lamellae under the 4th digit 14-16, nearly all 16.

The largest specimen was body 103 mm., tail 165 mm. The tail length ranged from $1.6 \times$ body length in the largest specimen to 2.1 in a smaller one (Body 58, tail 120).

Riopa albopunctata.

37 specimens of this common skink were collected and are now in the Society's collection. They were not thoroughly examined as regards squamation but colouration was noted.

The back was bronze brown to a width of 8 scale rows, diminishing to a width of 4 on the tail. At the base of each scale was a small darker spot. From the side of the neck on to the side of the body was spotted black and white, becoming indistinct past mid-body. The sides and underside of the tail bore small brown spots, one per scale. Some individuals had bright lemon yellow from the sides of the neck halfway to the groin.

Juveniles differed slightly from this description. They were dark bluish bronze above with seven lighter lines from neck to base of tail; the outer pair started from the corners of the eyes. The tail was dark crimson lake.

These lizards were found principally in damp situations under dead leaves.

Riopa punctata.

21 specimens were collected and are also in the Society's collection.

They had 4 rows of dark spots down the back, the dorso-lateral stripes from the canthus were well marked; on the sides, legs and base of tail were small brown spots which thinned out on the underside. On the sides of the anterior half of the body were small

white spots. In the young the tail was bright vermilion, with age the colour faded and the brown spots extended over the tail. The vermilion colouration persisted in individuals of as much as 70 mm. body length.

This common skink was found principally in somewhat dryer situations than *R. albopunctata*.

SERPENTES.

Typhlopidae.

Typhlops braminus.

48 specimens were collected and are now in the Society's collection.

They were all light in colour. The scales were pale brown. The general colour appeared to be largely due to underlying organs which could be seen through the skin to move backwards and forwards with each inspiration and expiration.

Smith mentions that Annandale's var. *arenicola* "are pale buff in colour" and "were found in sandy desert country". These specimens also lived in sand, so perhaps the light colour is adaptive.

Boidae.

Eryx conicus.

11 specimens were examined 6 ♂ and 5 ♀.

The largest ♂ was 480 total length (b.445 t.35); these are the same measurements as given in the *F.B.I.* No full grown ♀ was obtained, the largest was 487 total length (b.455 t.32). The ♂ showed a range of tail length from 6½% to 8% of total length, the ♀ from 5¾% to 6¾%. In both sexes the smallest specimen had the proportionately shortest tail.

As regards head shields there were no aberrations. Scales across forehead 8-10, mostly 9, 1 sp. 10. Scales round eye 10-13; 1 sp., single eye 10; 1 sp., single eye 13; the two sides different 5 spp. Supralabials 11-15; single side 11; single side 15. Maximum number of scale rows 42-52.

V 158-175. 2 spp. ♀ 158, ♂ 160 outside *F.B.I.* range. C 16-20. Anal always small between two smaller shields, the last ventral nearly always divided likewise into 3. 1 sp. 3rd subcaudal small, enclosed by 2nd and 4th.

Colour varied from brown to light sandy; band down back broken into islands, always a darker brown, and sometimes reddish, sometimes edged with even deeper brown, wholly or partially edged with whitish or light sandy yellow.

This snake appeared to be fairly common, all the specimens obtained were found by men digging in the course of road construction work.

Eryx johni.

7 specimens were examined 2 ♂ and 5 ♀. The largest specimens of both sexes exceeded the *F.B.I.* maxima by a small amount, ♂ 895 total length (b.788 t.107), ♀ 1075 total length

(b.980 t.95). In the 2 ♂ the tails were 12% and 14% of total length, in the 5 ♀ from 9% to 12% of total length.

As regards head shields there was little departure from the normal condition described in the *F.B.I.* Scales across forehead 6 or 7. Scales round eye 9-12 (*F.B.I.* 10 or 11) 1 sp. 9; 1 sp. single eye 12. Supralabials 11 or 12.

V 200-211, C 30-38. Last 1 or 2 ventrals and anal always small between pair of small scales, the sets of 3 having same width as normal ventrals.

Colour of young quite distinctive. Salmon pink on back with indistinct dark cross bands which become distinct and black on tail. The cross bars first fade on anterior half of body. Belly spotted salmon pink and brown.

With increase in size the salmon pink scales become edged with brown and eventually the whole back and belly is earthy brown with no trace of cross bars. Subcaudally it remains white and may also so remain ventrolaterally, although some spp. were brown all round. Scars sometimes showed a little pink.

The tails of all the large specimens were scarred as though they had been bitten. The idea suggested itself that the tail serves to receive attacks intended for the head, which it resembles at first sight.

It appeared to be fairly common. All the specimens were found in the same circumstances as *E. conicus*.

It was very docile, no specimen ever attempted to bite. The only occasion on which one was observed to move rapidly was when taking a rat.

The discovery of this species was a surprise for the nearest locality mentioned by Smith is Lucknow (about 675 miles from Cocanada). Smith quotes Russell's statement that "It is not uncommon in Bengal" and adds that "the regions to which he refers are well outside the area which it now inhabits".

Colubridae.

Ptyas mucosus.

18 specimens were examined, 8 ♂ and 9 ♀. The largest ♂ was 1955 total length (b.1420 t.535). The largest ♀ was 1845 total length (b.1322 t.523). In the ♂♂ the tail length varied from 26% to 28% of the total length, in the ♀♀ from 25½% to 30%.

Head shields; 1 sp. single loreal; 1 sp. 2 loreals, remainder 3 loreals; 1 sp. left prefrontal divided giving appearance of 4 loreals; 2 spp. lower left hand loreal met eye, in one also upper left temporal vertically divided. All other spp. temporals 2+2.

V ♂ 194-202 ♀ 196-203, C ♂ 117-124, ♀ 106-124.

The individual ventral counts were:—

♂	...	194	195	...	197	198	199	200		202
					197					
♀	...	...	...	196	197	198	199	200	201	203

This gives the ♀ a little higher average.

The vertebrales were all slightly enlarged.

As regards scale rows there was generally a ring of 23, a few rings of 21, about a dozen of 19, 17 to about mid-body, a short length of 16, a ring or two of 15 and the remainder 14. The 17 to 16 reduction was effected by the fusion of the vertebral row with one adjacent. In one specimen there was a drop from 17 to 15 to 14. The 15 to 14 reduction being by fusion of the vertebral row with the row adjacent. Another specimen dropped 17, 16, 15 a long stretch of 13, 2 rings of 12, 2 rings of 13 and 3 rings of 14. The point of fusion of the vertebral row with the row adjacent may evidently move.

The colour varied from light sandy yellow to such a dark colour that the bands could scarcely be distinguished. The belly was generally yellow.

From a ♀ 1695 total length (b.1260 t.435+) 8 eggs were taken on January 25th. They measured 53×15 — 56×18 . No embryos were visible. This snake was common.

Ahaetulla tristis.

8 specimens were examined, 4 ♂ and 4 ♀. The largest ♂ was 910 total length (b.605 t.305) the largest ♀ 1180 (b.855 t.325).

The head shields were normal with a few minor exceptions. 1 sp. small scale between anterior temporals, lower postocular and supralabials 6 and 7. 1 sp. small scale between 4 temporals on left hand side. 1 sp. supralabials 5 and 6 united.

Contrary to the list of common characters for the genus given in the *F.B.I.* the enlarged vertebral scales did not originate by the fusion of two rows on the neck. There was a single vertebral row straight back from the parietals.

V 183-188 (6 spp.) C 134-140 (4 spp.)

Scale rows generally a few rings of 17, about half the body length of 15, a few rings of 13, and the remainder 11. One ♀, V188, had the last 45 rings 9. In another ♀ V188, the last 7 rings numbered 11, 10, 9, 11, 11, 11, 11.

The colour was purplish brown above, a pale yellowish below. The black temporal stripe was not conspicuous, vertebral scales on the neck pale yellow, a median spot of the same colour on the parietals.

This snake appeared to be fairly common.

Natrix piscator.

20 grown specimens were examined and two batches of hatchlings, one of 13 and one of 17. The largest ♂ measured 880 total length (b.600, t.280) and the largest ♀ 1030 (b.770, t.260). The tail length of ♀ ♀ varied from 23% to 37% of the total length and from 29½% to 42% in the ♂ ♂. In the matter of scale characters the second batch of hatchlings, 17, showed so many irregularities that they will be described separately.

Head shields. Temporals 2+2, 16 spp.; 2+3, 5 spp.; 2+2 and 3+3, 1 sp.; 2+2 and 3+2, 1 sp., the last two both owing to

division of a 1st upper temporal. 4 infralabials in contact with the anterior genial on one side, 3 spp.; left infralabials 8 and 9 united, right 9 and 10 united, 1 sp.; 2 postoculars, 1 sp.; 2 postoculars one side only, 1 sp.; 4 postoculars one side only, 1 sp.

1 specimen had very abnormal head shields. On the right supralabials 3-8 were fused with one another, and the lower postocular was fused with the lower temporal and supralabials 6 and 7. The left infralabials had a small cuneiform scale between the 3rd and 4th.

There was a distinct difference in the ventral counts of the sexes.

♂ V 134-141

♀ V 146-156

In the case of the first batch of hatchlings there was a difference in the subcaudal counts also.

♂ V 136-139

C 89-93 (5 spp.)

♀ V 146-152

C 76-83 (8 spp.)

There were a few irregularities of the ventral scales. 1st V divided, 2 spp.; 2nd V divided, 1 sp.; 2nd and last V divided, 1 sp. V 132, 133 and 135 divided 1 sp.; last V broken up and some parts fused with adjacent shields, 1 sp.

As regards scale rows there was generally a ring of 25, a few rings of 21, a long stretch of 19 to past mid-body, 17 to anus.

The colouration was rather variable. The subocular and postocular streaks were always present, sometimes the postocular one continued past the corner of the mouth. The two parietal spots were always present except in one specimen with the left-hand one missing. The majority of specimens had 7 rows of spots, some 6 and a smaller number 6 on the neck and 7 on the body. The general ground colour was olive with a different colour between the spots which ranged from whitish, grey, sepia, brown, greenish yellow to red or pink, and which sometimes displaced the olive colour from the body.

As regards colouration of the hatchlings all had 6 rows of black spots.

The first batch fell into 2 groups in the matter of a number of colour characters. Group *A*, 1 ♂, 7 ♀; group *B* 4 ♂ 1 ♀. Head, *A* dark olive, *B* light olive; back, *A* olive, *B* yellow green; 2 parietal spots and a spot on the occiput, *A* white, *B* yellow; on each side behind each set of 3 black spots, *A* 2 red spots, *B* 2 pale red spots. This appears to be a case of partial sex-linkage of genes having a general effect on development of pigments.

The distribution of other colour characters in the two batches suggested that the following are genetically determined: presence or absence of: a black ring round parietal and occipital spots—dark stripes on sides of neck—dark band across occiput—yellow patches on sides of neck—yellow belly—small light spot above upper black spot on each side.

On February 11th, one snake laid 19 eggs during the night, they hatched out in from 51-52½ days. On February 16th, another snake laid 31 eggs during the night, they hatched out in from 37 to 38 days.

The eggs measured 27×17 — 25×15 mm. When laid they contained fairly well advanced embryos.

The hatchlings measured 154-195 total length.

The second batch of hatchlings showed many irregularities.

The internasals were divided obliquely, 2 spp., incompletely divided obliquely 2 spp. Temporals 2+2, 15 spp.; 2+3, 1 sp.; 2+1, 1 sp. 4 infralabials meet anterior genials, 14 spp. 2 post-oculars 1 sp.; on one side only 1 sp. Supralabials 8, 1 sp.; 8 on one side 2 spp. in one of these 5th divided giving appearance of subocular.

V ♂ 132-142 (13 spp.) ♀ 145-147 (4 spp.) C 71-84.

There were a great many irregularities of the ventrals. The irregularities consisted of, divided ventrals, intercalated shields half normal width, enlargement of one shield at the expense of its neighbours and intercalation of small scales between others. Only 3 spp. were quite normal.

The ventrals of which irregularities occur are tabulated opposite. X indicates an irregularity. Some of the tails also showed irregularities, consisting in that the shields were in opposite pairs instead of alternately, or a series of cuneiform scales between the normal ones. In 4 spp. the following stretches were irregular 1-5, 16-25, 64-70, 75-80 respectively.

The umbilical scar covered 3 ventral shields and varied in position from 99-101 in a sp. V 132 to 128-130 in a sp. V 146.

Unfortunately it was not known which ♀ laid the eggs, consequently not so much genetical information can be deduced from the batches as might have been the case.

The differences in the subcaudal counts of the sexes in the first batch may be due to sex-limited differences in tail length or, perhaps, to the fact that a well marked sexual difference in ventral counts would give an incidental difference in subcaudal counts if there were no great variation in total vertebral number. Asymmetry of shields may be due to coiling of embryos exerting a mechanical effect on development.

Natrix stolata.

9 specimens were examined. The largest ♂ was 495 total length (b.361, t.134) the largest ♀ 502 total length (b.379, t.213).

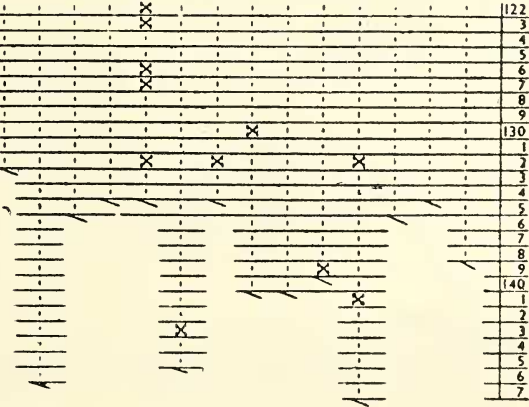
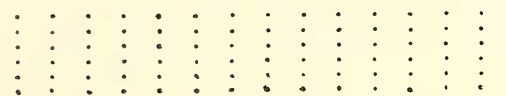
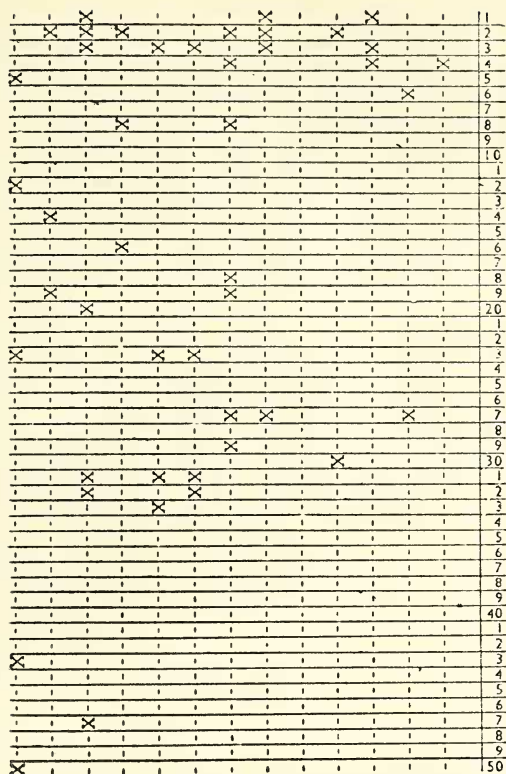
There were many irregularities of the head shields. 3rd and 4th supralabials fused on one side, 1 sp.; 7 supralabials, 2 spp., on one side only 1 sp., in which 3rd and 4th meet eye; 4th and 5th supralabials only met eye 1 sp.; 4 infralabials met anterior genial, 1 sp.; 6 infralabials on one side met anterior genial, 1 sp.; temporals 1+2, 3 spp.; 1+1+3, 2 spp.; 1+2 upper shield divided 1 sp.; 1+3 upper shield divided, 1 sp.

V 143-151

C 67-90.

1st V divided and half shield between V's 145 & 146, 1 sp.

The colouration was fairly constant. Olive greenish above with black cross bands intersected by longitudinal buff stripes, at the intersections white spots, these are more pronounced and black



Irregularities in ventrals of *Natrix piscator*.

bands less pronounced on the neck. Sides of ventral shields normally have scattered small black spots. Top of head olive, shields sometimes edged with black. Lips pre- and post-oculars and sides of neck usually yellow, sometimes all yellow is absent.

Five specimens were caught within a few yards of one another outside the cook house. When they were brought to the writer 4 were dead and 1 alive. When they were examined it was found that the live ♂ was copulating with a dead ♀. It resented attempts to separate them.

8 eggs were laid on February 1st, they hatched in 41 days. They measured 24×12 — 21×11 .

Atretium schistosum.

15 specimens were examined, 14 ♀ and 1 ♂. The largest ♀ measured 845 total length (b.677, t.163+broken). This is larger than the *F.B.I.* record of 800 total length (b.615, t.185).

The head shields were variable. 3 postoculars 6 spp.; 3 and 2, 3 spp.; 2, 4 spp. Supraoculars divided giving appearance of 2 preoculars 2 spp. Temporals 2+2, 8 spp.; 2+3 and 2+2, 3 spp.; 2+3, 1 sp.; 2+2 and 2+1, 1 sp.; 2+2 and 2+1 (upper temporal fused with parietal) 1 sp.; 2+2 and 3+1, 1 sp. Supralabials 9, 12 spp.; 8 on left 3rd and 4th meet eye, 10 on right 5th and 6th meet eye, 1 sp. Infralabials 5 meet anterior genials, 8 spp.; 4 meet them, 3 spp.

V ♂ 144 (1 sp.) ♀ 150-159 (14 spp.) C 66-71 (5 spp.)

10 out of 15 tails were docked.

The scale rows generally ran 1 ring of 23, 1 or 2 of 21, 19 to mid-body, 17 to anus.

The colouration was generally olive. 2 spp. were slaty grey with grey eyes. There was generally a dark line on the back on rows 7 and 8. A dark streak runs back from the eye on to rows 3 and 4 on the neck, sometimes followed by another streak on rows 2 and 3. A dark lateral streak between rows 1 and 2 from the middle of the body back was sometimes present. Most showed a light lateral line on row 3. A red line down the side on rows 4 and 5 present in 2 spp. The lips and under surfaces yellow.

One specimen, body 498, contained 5 eggs in one oviduct 7 in the other on December 26th.

Two specimens (bodies 633 and 677) laid 76 eggs between them in one night on January 15th. One specimen (body 677) laid 24 eggs January 30th.

The eggs measured 23×18 — 21×15 . No embryo was visible. Unfortunately all the eggs became addled before hatching but one contained a nearly finished embryo after 78 days.

In the stomachs of 2 specimens crabs were found. Not one was observed to eat frogs in captivity. This snake was very common in the paddy fields.

Lycodon travancoricus.

This snake did not appear to be common. Only four specimens were obtained, all were aberrant, 3 ♂ and 1 ♀. Owing to the

aberrations the specimens will be described separately, lettered *A*, *B*, *C*, (3♂) and *D*. (♀).

In all 4 the anterior nasal is larger than the posterior (*F.B.I.* 'subequal'). *A*, *B* and *C* have anal divided (*F.B.I.* 'anal single') *D* anal single. *A* loreals just fail to meet, *C* and *D* loreals are in good contact with the internasals. Temporals *A* 2+3 and 3+3, *B* 2+3, *C* 2+4, *D* 2+3.

A, V 188 C 70; *B*, V 164 C 67; *C*, V 180 C 67; *D*, V 183 C 49

The colouration agreed fairly well in the specimens. Ground colour purplish brown; 20-23 yellow bands on back two rings wide, shrink and become spots towards anus. Each yellow scale spotted with dark brown. 8-10 dorsal spots on tail, the last few were just distinguishable yellow marks. Head purplish brown above. Upper lips yellowish, first 7 or 8 supralabials have brown centres diminishing to a spot on the 8th. From the 6th and 7th backwards a dark brown band crosses the upper half of each labial. The yellow on the lips runs back as a speckled yellow band to join the first transverse band. Scale row 1 edged with yellow some scales in other rows edged yellow forming triangular expansions of cross bands.

***Lycodon striatus*.**

Only 3 specimens were obtained.

V 152, 165 and 172. The count of 172 exceeds that given in the *F.B.I.* for south of 20° North. C 42, 46 and 41 respectively.

The head shields were all normal, all the specimens had temporals 2+3.

The 3 spp. agreed closely in colour. They were pure black with white spots on the back. The centres of the white spots were yellow on vertebral and adjacent rows on anterior half of body, the white spots expand laterally as white flecked triangles. There was no bar on the nape.

***Dryophis nasutus*.**

3 specimens were examined.

Temporals variable, 2+2, 1 sp.; 1+3 and 1+2, 1 sp.; 3+2 first upper divided, 1 sp. Presuboculars 2, 1 sp.; 1, 2 spp.

In the *F.B.I.* 15:15:13 rows are given as a common character for the genus. 2 spp. had 13 rows followed by 28 rings of 11, followed in 1 sp. by 11 rings of 10, in the other by 44 rings of 10.

V 180, 197 199 C 146, 170 154.

The colour was consistent for these and other specimens.

Verdant green above, oblique black and white stripes on interstitial skin of anterior half of neck, pale green below, yellow line along keeled edge of ventrals. Lips yellow or yellowish.

***Boiga trigonata*.**

Several specimens were seen but none were examined. It appeared to be moderately common.

Cerberus rhynchops.

3 specimens were examined. The larger ♀ was 913 total length (b.778, t.145+broken) the ♂ was 768 (b.612, t.156).

There were 3 suboculars and 9 supralabials, the last 3 horizontally divided.

V ♀ 145, 143 ♂ 150 C ♀ (broken), 55 ♂ 63.

The scale rows ran 25, 23, 21, 19, 17.

The colour was dirty olive above with black bands on belly. Dark bands on back were only just perceptible.

On August 14 a specimen gave birth to young, which escaped from a cage not constructed to hold them. Three were recovered, they were coloured as follows: olive above, black cross-bars, anterior few not full width, others irregular and mixed with some black spots; black streak through eye onto side of neck; lips and belly white, black transverse bands on belly merging to form a more or less distinct median line down belly.

This snake was fairly common in the Godavari estuary.

Elapidae.**Naja naja.**

The local people said that the cobra is found in the district but that it is not killed because it is held as sacred. This is probably why no specimens were obtained.

Bungarus caeruleus.

There is a specimen obtained locally in Pittapur Raja's College. However all the "kātālā pāmbu" (Telugu name for krait) brought by the villagers were Lycodons.

Viperidae.**Vipera russelli.**

3 specimens were examined. The largest was 1178 total length (b.975, t. 203).

Round eye 12 or 13 scales, across tip of snout 2 or 3 scales, between supraoculars 7 scales, supralabials 10 or 11, 3 rows between them and eye.

In the middle part of the body were small scattered spots between the large dorsal and lateral markings, below the lateral markings were irregular brown marks on rows 1 to 3. There were numerous semilunar spots on the ventral shields of the anterior half of the body.